

SEQUENCE LISTING

<110> Stephen M. Allen
Elmer P. Heppard
Guo-Hua Miao
Zude Weng

<120> Plant Catabolite Repression Genes

<130> BB1316

<140> 09/857,525

<141>

<150> 60/112,564

<151> 1998-12-16

<160> 22

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<211> 1576

<212> DNA

<213> Zea mays

<400> 1

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<211> 451

<212> PRT

<213> Zea mays

<400> 2

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Phe	Val	Asp	Gly	Glu	Trp	Arg	His	Asp	Glu	Arg	Gln	Pro	Thr	Ile	Ser
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Gly	Glu	Phe	Gly	Ile	Val	Asn	Thr	Leu	Tyr	Leu	Thr	Arg	Glu	Tyr	Asn
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Gln	Ile	Asn	Thr	Leu	Ser	Ser	Pro	Ser	Thr	Pro	Gly	Ser	Arg	Met	Asn
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Gly	Thr	Val	Ser	Glu	Gly	Thr	Leu	Arg	Val	Ser	Glu	Ala	Ala	Ile	Gln
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Ile	Ser	Arg	Cys	Arg	Val	Ser	Glu	Tyr	Leu	Asn	Leu	His	Thr	Cys	Tyr
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Asp	Leu	Leu	Pro	Asp	Ser	Gly	Lys	Val	Ile	Ala	Leu	Asp	Ile	Asn	Leu
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Pro	Val	Lys	Gln	Ser	Phe	His	Ile	Leu	His	Glu	Gln	Gly	Ile	Pro	Val
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Ala	Pro	Leu	Trp	Asp	Ser	Phe	Arg	Gly	Gln	Phe	Val	Gly	Leu	Leu	Ser
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Pro	Leu	Asp	Phe	Ile	Leu	Ile	Leu	Arg	Glu	Leu	Glu	Thr	His	Gly	Ser
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Gln	Gln	His	Leu	Val	His	Ala	Thr	Pro	Tyr	Glu	Ser	Leu	Arg	Asp	Ile
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Ala	Val	Lys	Leu	Leu	Gln	Asn	Gly	Ile	Ser	Thr	Val	Pro	Val	Ile	Tyr
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Ser	Ser	Ser	Ser	Asp	Gly	Ser	Phe	Pro	Gln	Leu	Leu	His	Leu	Ala	Ser
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Leu	Ser	Gly	Ile	Leu	Lys	Cys	Ile	Cys	Arg	Tyr	Phe	Lys	Asn	Ser	Thr
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Gly	Asn	Leu	Pro	Ile	Leu	Asn	Gln	Pro	Val	Cys	Ser	Ile	Pro	Leu	Gly
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Ser	Trp	Val	Pro	Lys	Ile	Gly	Asp	Leu	Asn	Ser	Arg	Pro	Leu	Ala	Met
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<211> 493

<212> PRT

<213> *Oryza sativa*

<400> 4

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Lys Arg Val Tyr Leu Thr Gly Ser Phe Thr Arg Trp Thr Glu His Leu
 35 40 45

Pro Met Ser Pro Val Glu Gly Cys Pro Thr Val Phe Gln Ala Ile Cys
 50 55 60

Ser Leu Ser Pro Gly Ile His Gln Tyr Lys Phe Cys Val Asp Gly Glu
 65 70 75 80

Trp Arg His Asp Glu Arg Gln Pro Thr Ile Thr Gly Asp Tyr Gly Val
 85 90 95

Val Asn Thr Leu Cys Leu Thr Arg Asp Phe Asp Gln Ile Asn Thr Ile
 100 105 110

Leu Ser Pro Ser Thr Pro Gly Ser Arg Met Asn Met Asp Val Asp Asn
 115 120 125

Asp Asn Phe Gln Arg Thr Val Ser Leu Ser Asp Gly Ile Ile Gln Glu
 130 135 140

Gly Pro Gln Arg Ile Ser Glu Ala Ala Ile Gln Ile Ser Arg Cys Arg
 145 150 155 160

Val Ala Asp Phe Leu Asn Gly Gln Thr Gly Tyr Asp Leu Leu Pro Asp
 165 170 175

Ser Gly Lys Val Ile Ala Leu Asp Val Asn Leu Pro Val Lys Gln Ser
 180 185 190

Phe His Ile Leu His Glu Gln Gly Ile Pro Val Ala Pro Leu Trp Asp
 195 200 205

Ser Phe Arg Gly Gln Phe Val Gly Leu Leu Ser Pro Leu Asp Phe Ile
 210 215 220

Leu Ile Leu Arg Glu Leu Glu Thr His Gly Ser Asn Leu Thr Glu Glu

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Thr	Tyr	Ala	Arg	Asn	Glu	Gly	Ser	Trp	Arg	Ala	Asn	His	His	Leu	Val
			260					265					270		
His	Ala	Thr	Pro	Tyr	Glu	Ser	Leu	Arg	Glu	Ile	Ala	Met	Lys	Ile	Leu
		275					280					285			
Gln	Asn	Gly	Val	Ser	Thr	Val	Pro	Ile	Met	Phe	Ser	Ser	Ser	Pro	Asp
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Gly	Ser	Tyr	Pro	Gln	Leu	Leu	His	Leu	Ala	Ser	Leu	Ser	Gly	Ile	Leu
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Lys	Cys	Ile	Cys	Arg	Tyr	Phe	Lys	Asn	Ser	Gln	Gly	Asn	Leu	Pro	Ile
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Leu	Ser	Gln	Pro	Val	Cys	Thr	Ile	Pro	Leu	Gly	Thr	Trp	Val	Pro	Lys
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Ile	Gly	Asp	Pro	Asn	Gly	Arg	Pro	Leu	Ala	Met	Leu	Arg	Pro	Asn	Thr
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Ser	Leu	Ser	Ala	Ala	Leu	Asn	Leu	Leu	Val	Gln	Ala	Gly	Val	Ser	Ser
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Ser	Asp	Ile	Thr	Ala	Leu	Ala	Lys	Asp	Lys	Val	Tyr	Thr	His	Ile	Arg
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Leu	Asp	Glu	Met	Thr	Ile	His	Gln	Ala	Leu	Gln	Leu	Gly	Gln	Asp	Ala
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Asn	Ser	Pro	Phe	Gly	Phe	Phe	Asn	Gly	Gln	Arg	Cys	Gln	Met	Cys	Leu
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Arg	Ser	Asp	Thr	Leu	Leu	Lys	Val	Met	Glu	Arg	Leu	Ala	Asn	Pro	Gly
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Val	Arg	Arg	Val	Phe	Ile	Val	Glu	Ala	Gly	Ser	Lys	Arg	Val	Glu	Gly
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<212> DNA

<213> Oryza sativa

<400> 5

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aaaaccagat tgtcagtatg cctattggta catggtcacc acatactggc aaggcaagca 180
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<210> 6
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 <212> PRT
 <213> Oryza sativa

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              20              25              30

Pro Glu Gly Tyr Ser Phe Leu Gln Asn Gln Ile Val Ser Met Pro Ile
              35              40              45

Gly Thr Trp Ser Pro His Thr Gly Lys Ala Ser Asn Arg Gln Leu Arg
  50              55              60

Thr Ser Arg Pro Ser Thr Pro Leu Asn Ser Cys Leu Asp Leu Leu Leu
  65              70              75              80

Glu Asp Arg Val Ser Ser Ile Pro Ile Val Asp Asp Asn Gly Ala Leu
              85              90              95

Leu Asp Val Tyr Ser Leu Ser Asp Ile Met Ala Leu Gly Lys Asn Asp
  100             105             110

Val Tyr Thr Arg Ile Glu Leu Glu Gln Val Thr Val Glu His Ala Leu
  115             120             125

Glu Leu Gln Tyr Gln Val Asn Gly Arg Arg His Cys His Thr Cys Leu
  130             135             140

Ser Thr Ser Thr Phe Leu Glu Val Leu Glu Gln Leu Ser Ala Pro Gly
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<210> 7
 <211> 2160
 <212> DNA
 <213> Glycine max

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<210> 8

<211> 482

<212> PRT

<213> Glycine max

<400> 8

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Ser Val Tyr Leu Ser Gly Ser Phe Thr Arg Trp Ser Glu Leu Leu Gln
          35                     40                     45

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Met Ser Pro Val Glu Gly Cys Pro Thr Val Phe Gln Val Ile His Ser
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Leu Val Pro Gly His His Gln Tyr Lys Phe Phe Val Asp Gly Glu Trp
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Arg His Asp Asp Leu Gln Pro Cys Glu Ser Gly Glu Tyr Gly Ile Val
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Asn Thr Val Ser Leu Ala Thr Asp Pro Asn Ile Leu Pro Val Leu Thr
          100                    105                    110

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Pro Asp Ile Val Ser Gly Ser Asn Met Asp Val Asp Asn Glu Ala Phe
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 Pro Arg Ile Ser Asp Val Asp Ile Gln Thr Ser Arg Gln Arg Ile Ser
 145 150 155 160
 Ala Phe Leu Ser Met Ser Thr Ala Tyr Glu Leu Leu Pro Glu Ser Gly
 165 170 175
 Lys Val Val Thr Leu Asp Val Asp Leu Pro Val Lys Gln Ala Phe His
 180 185 190
 Ile Leu His Glu Gln Gly Ile Pro Ile Ala Pro Leu Trp Asp Ile Cys
 195 200 205
 Lys Gly Gln Phe Val Gly Val Leu Ser Ala Leu Asp Phe Ile Leu Ile
 210 215 220
 Leu Arg Glu Leu Gly Asn His Gly Ser Asn Leu Thr Glu Glu Glu Leu
 225 230 235 240
 Glu Thr His Thr Ile Ser Ala Trp Lys Gly Gly Lys Trp Thr Gly Phe
 245 250 255
 Thr Gln Cys Phe Ile Arg Ala Gly Pro Tyr Asp Asn Leu Lys Glu Ile
 260 265 270
 Ala Val Lys Ile Leu Gln His Gly Ile Ser Thr Val Pro Ile Ile His
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 290 295 300
 Gly Ile Leu Lys Cys Ile Cys Arg Tyr Phe Arg Asn Cys Ser Ser Ser
 305 310 315 320
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 Val Pro Lys Ile Gly Glu Ser Asn Arg Arg Pro Leu Ala Met Leu Arg
 340 345 350
 Pro Asn Ala Ser Leu Thr Ser Ala Leu Asn Leu Leu Val Gln Ala Gln
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 Val Ser Ser Ile Pro Ile Val Asp Asp Ser Asp Ser Leu Leu Asp Ile
 370 375 380
 Tyr Cys Arg Ser Asp Ile Thr Ala Leu Ala Lys Asp Arg Thr Tyr Thr
 385 390 395 400
 His Ile Asn Leu Asp Glu Met Thr Val His Gln Ala Leu Gln Leu Gly
 405 410 415
 Gln Asp Ser Tyr Asn Thr Tyr Glu Leu Ser Cys Gln Arg Cys Gln Met
 420 425 430

Cys Leu Arg Thr Asp Ser Leu His Lys Val Met Glu Arg Leu Ala Ser
 435 440 445

Pro Gly Val Arg Arg Leu Val Ile Val Glu Ala Gly Ser Lys Arg Val
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Glu Gly Ile Ile Ala Leu Ser Asp Ile Phe Asn Phe Phe Leu Gly Tyr
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Asn Ser

<210> 9
 <211> 2538
 <212> DNA
 <213> Glycine max

<400> 9

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cattgggtgg	tagttttgga	ttggtgaatg	gagaagtaaa	atgggtatgt	ctgtggttat	1920
gacacttaag	catccataca	actagccatc	atcacttgtc	caaaccattg	aaagtgtctt	1980
ctacacgggtg	attttatctc	tcatttcatt	gtaatacaat	tggattggcc	tcttgcttta	2040
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cccaaaaattt	attcatctct	ccccattcgt	attatcttca	aatgtattgt	gctcctgaca	2160
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<210> 10

<211> 492

<212> PRT

<213> Glycine max

<400> 10

Met Phe Gly Gln Ser Met Asp Ser Ala Arg Asp Ala Ala Gly Gly Val
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Ala Gly Thr Val Leu Ile Pro Met Arg Phe Val Trp Pro Tyr Gly Gly
 20 25 30

Arg Ser Val Phe Leu Ser Gly Ser Phe Thr Arg Trp Leu Glu Leu Leu
 35 40 45

Pro Met Ser Pro Val Glu Gly Cys Pro Thr Val Phe Gln Val Ile Tyr
 50 55 60

Asn Leu Pro Pro Gly Tyr His Gln Tyr Lys Phe Phe Val Asp Gly Glu
 65 70 75 80

Trp Arg His Asp Glu His Gln Pro Tyr Val Pro Gly Glu Tyr Gly Ile
 85 90 95

Val Asn Thr Val Leu Leu Ala Thr Asp Pro Asn Tyr Met Pro Val Leu
 100 105 110

Pro Pro Asp Val Ala Ser Gly Asn Ser Met Asp Val Asp Asn Asp Ala
 115 120 125

Phe Arg Arg Met Ala Arg Leu Thr Asp Gly Thr Leu Ser Glu Val Leu
 130 135 140

Pro Arg Ile Ser Asp Thr Asp Val Gln Ile Ser Arg Gln Arg Ile Ser
 145 150 155 160

Ala Phe Leu Ser Ser His Thr Ala Tyr Glu Leu Leu Pro Glu Ser Gly
 165 170 175

Lys Val Val Ala Leu Asp Val Asp Leu Pro Val Lys Gln Ala Phe His
 180 185 190

Ile Leu His Glu Gln Gly Val Phe Met Ala Pro Leu Trp Asp Phe Cys
 195 200 205

Lys Gly Gln Phe Val Gly Val Leu Ser Ala Ser Asp Phe Ile Leu Ile
 210 215 220

Leu Arg Glu Leu Gly Asn His Gly Ser Asn Leu Thr Glu Glu Glu Leu
 225 230 235 240

Glu Thr His Thr Ile Ser Ala Trp Lys Glu Gly Lys Ser Tyr Leu Asn
 245 250 255

Arg Gln Asn Asn Gly His Gly Thr Ala Phe Ser Arg Cys Phe Ile His
 260 265 270

Ala Gly Pro Tyr Asp Asn Leu Lys Asp Ile Ala Met Lys Ile Leu Gln
275 280 285

Lys Glu Val Ser Thr Val Pro Ile Ile His Ser Ser Ser Glu Asp Ala
290 295 300

Ser Phe Pro Gln Leu Leu His Leu Ala Ser Leu Ser Gly Ile Leu Lys
305 310 315 320

Cys Ile Cys Arg Tyr Phe Arg His Cys Ser Ser Ser Leu Pro Val Leu
325 330 335

Gln Leu Pro Ile Cys Ala Ile Pro Val Gly Thr Trp Val Pro Lys Ile
340 345 350

Gly Glu Ser Asn Arg Arg Pro Leu Ala Met Leu Arg Pro Thr Ala Ser
355 360 365

Leu Ala Ser Ala Leu Asn Leu Leu Val Gln Ala Gln Val Ser Ser Ile
370 375 380

Pro Ile Val Asp Asp Asn Asp Ser Leu Leu Asp Ile Tyr Cys Arg Ser
385 390 395 400

Asp Ile Thr Ala Leu Ala Lys Asn Arg Ala Tyr Thr His Ile Asn Leu
405 410 415

Asp Glu Met Thr Val His Gln Ala Leu Gln Leu Gly Gln Asp Ala Tyr
420 425 430

Ser Pro Tyr Glu Leu Arg Ser Gln Arg Cys Gln Met Cys Leu Arg Ser
435 440 445

Asp Pro Leu His Lys Val Met Glu Arg Leu Ala Asn Pro Gly Val Arg
450 455 460

Arg Leu Val Ile Val Glu Ala Gly Ser Lys Arg Val Glu Gly Ile Val
465 470 475 480

Ser Leu Ser Asp Ile Phe Lys Phe Phe Ile Gly Gly
485 490

<210> 11

<211> 1266

<212> DNA

<213> Glycine max

<400> 11

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tctacctctt tcgtttcgac tcatcattct taataccgat ttactggtca agaagagctt 180
gaccatcctt ctacaaaatg gtatcgtttc agccccgcta tgggattccc atacctcaac 240
ctttgctgga cttcttacga cttcggacta tataaatgtt atccaatatt actggcagaa 300
tccagaagcc ctcaatcaaa tagatcaatt caaattgagt agcttaagag atatcgaaaa 360
ggcaattggc gtactacctt tggagacggg atcggtacat cctgcgcgac ctctttacga 420
tgcttgctgc gagatgttgc aaaccggggc ccgccgtatc ccgctggttg atgttgatga 480
cgagacggga aaagagatgg tggtcagtgt gattacacaa tatcgatatcc tgaagtttat 540
tagtgtcaat gtcgaagaga cgggaattctt gaagaaaagt gtatcggaca tcaaacttgg 600
aacttatggg gacctacaaa ccgcaaatat ggacactccg gtgatcgacg tcatacatat 660
gatggtcaaa cacagcattt cgagcgttcc cattgttgac aaagattcgc gagtacttaa 720

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tcttttcgag gctgtcgatg taatcacgat tattaagggt ggtgtatacg atggtctgac 780
tttgactgtg ggagaagctt tggccaatag ggcagaagac tttgccggga tttatacttg 840
cagtgaagaa gacaggttgg attcgatctt tgacacgatt cgaaaatcta gagtgcacgc 900
attggtgggt atagatgaag agcagcattt gaagggagtg atctctttgt cggatatattt 960
gcagtatgta ctctacatg gagaagacga tgattgagcc tgtccgatat tggccatgat 1020
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cgggtcatta aaatggccac aaatagatgt gattgggcga tttattcata ttcgttaata 1140
ccattttatc ggctcggact aaggataata tggcggattg gcttgtgaat attttatgga 1200
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<210> 12
 <211> 318
 <212> PRT
 <213> Glycine max

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<400> 12
Met Ser Ala Leu Asp Arg Asp Gln Gln Lys Gly Leu Lys Ser Ile Arg
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Asp Phe Leu Lys Arg Arg Thr Ser Tyr Asp Val Leu Pro Leu Ser Phe
      20                      25                      30

Arg Leu Ile Ile Leu Asn Thr Asp Leu Leu Val Lys Lys Ser Leu Thr
      35                      40                      45

Ile Leu Leu Gln Asn Gly Ile Val Ser Ala Pro Leu Trp Asp Ser His
      50                      55                      60

Thr Ser Thr Phe Ala Gly Leu Leu Thr Thr Ser Asp Tyr Ile Asn Val
      65                      70                      75                      80

Ile Gln Tyr Tyr Trp Gln Asn Pro Glu Ala Leu Asn Gln Ile Asp Gln
      85                      90                      95

Phe Lys Leu Ser Ser Leu Arg Asp Ile Glu Lys Ala Ile Gly Val Leu
      100                      105                      110

Pro Leu Glu Thr Val Ser Val His Pro Ala Arg Pro Leu Tyr Asp Ala
      115                      120                      125

Cys Arg Glu Met Leu Gln Thr Arg Ala Arg Arg Ile Pro Leu Val Asp
      130                      135                      140

Val Asp Asp Glu Thr Gly Lys Glu Met Val Val Ser Val Ile Thr Gln
      145                      150                      155                      160

Tyr Arg Ile Leu Lys Phe Ile Ser Val Asn Val Glu Glu Thr Glu Phe
      165                      170                      175

Leu Lys Lys Ser Val Ser Asp Ile Lys Leu Gly Thr Tyr Gly Asp Leu
      180                      185                      190

Gln Thr Ala Asn Met Asp Thr Pro Val Ile Asp Val Ile His Met Met
      195                      200                      205

Val Lys His Ser Ile Ser Ser Val Pro Ile Val Asp Lys Asp Ser Arg
      210                      215                      220

Val Leu Asn Leu Phe Glu Ala Val Asp Val Ile Thr Ile Ile Lys Gly

```

225	230	235	240
Gly Val Tyr Asp Gly Leu Thr Leu Thr Val Gly Glu Ala Leu Ala Asn	245	250	255
Arg Ala Glu Asp Phe Ala Gly Ile Tyr Thr Cys Ser Glu Glu Asp Arg	260	265	270
Leu Asp Ser Ile Phe Asp Thr Ile Arg Lys Ser Arg Val His Arg Leu	275	280	285
Val Val Ile Asp Glu Glu Gln His Leu Lys Gly Val Ile Ser Leu Ser	290	295	300
Asp Ile Leu Gln Tyr Val Leu Leu His Gly Glu Asp Asp Asp	305	310	315

<210> 13
 <211> 1632
 <212> DNA
 <213> Triticum aestivum

<400> 13

gcacgagccg	atgtctccag	tcgaagggtg	ccccactgta	tttcaagcta	tctgcaactt	60
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gcaacctact	ataactggag	agtatgggtg	ggtaaacact	ttatacttga	caagggaatt	180
tgaccacata	aatactgtac	tgagccccac	tacacctggg	agcaggatgg	atgtggacag	240
tgacagtttt	caacgaatgg	gttcgttgtc	ggatggtgcc	cttcaggaag	gttctccaag	300
aatctcagag	gctgctatac	agatctctag	gtgtcgtgtt	gctgagtatc	tgaatgcgca	360
tacaggctat	gacctactac	cagattctgg	aaaggtcatt	gctctggaca	ttaatttacc	420
tgtgaagcaa	tctttccata	ttctccatga	acaggggatt	cctgtggctc	ctctgtggga	480
ttcattcagg	ggtcagtttg	ttggccttct	gagccccactg	gattttatac	ttatatggag	540
agagctggaa	actcatggct	caaacctgac	agaggaacag	cttgaaacac	acactatatac	600
tgcgtggaaa	gaggctaagc	ggcaaaactta	tggaaagaaat	gatggacaac	ttagatcaaa	660
tcagcatcta	gtgcatgcc	ccccttatga	atccttgagg	ggtattgcca	tgaaaataact	720
cgaaactggc	atttctacag	tcccaatcat	ctattcatcg	tcatcagatg	gatcgtttcc	780
gcagctgttg	catcttgc	ccctttcagg	aattttgaaa	tgtatctgta	gatacttcaa	840
gaactccact	ggtagtttgc	cgattctaaa	ccaaccagta	tgctcaattc	cgctgggtac	900
ctgggttcca	aaaattgggtg	aaacaaatgg	tcatccattg	gctatgttgc	ggcctaatac	960
atctcttagc	tctgccctta	acttgttggt	tcaagctgga	gttagttcaa	taccatttgt	1020
ggatgataac	gactcgctga	tcgacacata	ctccagaagt	gacatcacag	ctctagcgaa	1080
agacaagggtc	tacaccata	tccgcctaga	tgagatgacc	attcatcagg	ccttgcagct	1140
cgggcaagac	gcgaattcac	cttttggtg	tttcaatggt	caaagatgcc	agatgtgtct	1200
ccagtctgac	cctttgctga	aggttatgga	gagattggct	aatcctgggg	tgcgctcgct	1260
gttcatcgtg	gaggctggca	gcaagcgagt	ggaaggcgta	atatacgctga	gcgacataatt	1320
caagttgctg	ctgagctagc	gaaaggcctg	ttttcgttag	ttccggggca	agcggtgcca	1380
gaagagctag	catgcaagaa	agagattgtg	gagccaacat	ggagttctct	ctctggcttg	1440
ctcttgagca	agagagtagc	aaaacagatt	gtaaagtttt	tttccctttc	gttgtgccaa	1500
cccaacccaa	ccccaccgt	ccgtccgtcc	gactgtcgta	actgaaacta	cctggtgact	1560
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aaaaaaaaaa	aa					1632

<210> 14
 <211> 442
 <212> PRT
 <213> Triticum aestivum

<400> 14

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Leu Pro Pro Gly Ile Tyr Gln Tyr Lys Phe Asn Val Asp Gly Gln Trp
 20 25 30

Arg His Asp Glu Gly Gln Pro Thr Ile Thr Gly Glu Tyr Gly Val Val
 35 40 45

Asn Thr Leu Tyr Leu Thr Arg Glu Phe Asp His Ile Asn Thr Val Leu
 50 55 60

Ser Pro Thr Thr Pro Gly Ser Arg Met Asp Val Asp Ser Asp Ser Phe
 65 70 75 80

Gln Arg Met Gly Ser Leu Ser Asp Gly Ala Leu Gln Glu Gly Ser Pro
 85 90 95

Arg Ile Ser Glu Ala Ala Ile Gln Ile Ser Arg Cys Arg Val Ala Glu
 100 105 110

Tyr Leu Asn Ala His Thr Gly Tyr Asp Leu Leu Pro Asp Ser Gly Lys
 115 120 125

Val Ile Ala Leu Asp Ile Asn Leu Pro Val Lys Gln Ser Phe His Ile
 130 135 140

Leu His Glu Gln Gly Ile Pro Val Ala Pro Leu Trp Asp Ser Phe Arg
 145 150 155 160

Gly Gln Phe Val Gly Leu Leu Ser Pro Leu Asp Phe Ile Leu Ile Leu
 165 170 175

Arg Glu Leu Glu Thr His Gly Ser Asn Leu Thr Glu Glu Gln Leu Glu
 180 185 190

Thr His Thr Ile Ser Ala Trp Lys Glu Ala Lys Arg Gln Thr Tyr Gly
 195 200 205

Arg Asn Asp Gly Gln Leu Arg Ser Asn Gln His Leu Val His Ala Thr
 210 215 220

Pro Tyr Glu Ser Leu Arg Gly Ile Ala Met Lys Ile Leu Glu Thr Gly
 225 230 235 240

Ile Ser Thr Val Pro Ile Ile Tyr Ser Ser Ser Ser Asp Gly Ser Phe
 245 250 255

Pro Gln Leu Leu His Leu Ala Ser Leu Ser Gly Ile Leu Lys Cys Ile
 260 265 270

Cys Arg Tyr Phe Lys Asn Ser Thr Gly Ser Leu Pro Ile Leu Asn Gln
 275 280 285

Pro Val Cys Ser Ile Pro Leu Gly Thr Trp Val Pro Lys Ile Gly Glu
 290 295 300

Pro Asn Gly His Pro Leu Ala Met Leu Arg Pro Asn Thr Ser Leu Ser
 305 310 315 320

Ser Ala Leu Asn Leu Leu Val Gln Ala Gly Val Ser Ser Ile Pro Ile
 325 330 335

Val Asp Asp Asn Asp Ser Leu Ile Asp Thr Tyr Ser Arg Ser Asp Ile
 340 345 350

Thr Ala Leu Ala Lys Asp Lys Val Tyr Thr His Ile Arg Leu Asp Glu
 355 360 365

Met Thr Ile His Gln Ala Leu Gln Leu Gly Gln Asp Ala Asn Ser Pro
 370 375 380

Phe Gly Leu Phe Asn Gly Gln Arg Cys Gln Met Cys Leu Gln Ser Asp
 385 390 395 400

Pro Leu Leu Lys Val Met Glu Arg Leu Ala Asn Pro Gly Val Arg Arg
 405 410 415

Val Phe Ile Val Glu Ala Gly Ser Lys Arg Val Glu Gly Val Ile Ser
 420 425 430

Leu Ser Asp Ile Phe Lys Leu Leu Leu Ser
 435 440

<210> 15
 <211> 538
 <212> DNA
 <213> Zea mays

<220>
 <221> unsure
 <222> (494)
 <223> n = A, C, G or T

<400> 15
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 gcgtcaacct accatatctg gggagtttgg catagttaac acactttact tgacaaggga 180
 atataaccaa ataaacacct tatcaagtcc aagcacacct ggaagcagga tgaacatgga 240
 tgtggataat gaaaattttc aacgtacggg tacgttgtca gatggcaccg tttcagaagg 300
 tactctgaga gtttcagagg ctgcaatata aatatctagg tgctgtgttt ctgaatatct 360
 gaatttgcac acatgctatg atttaactccc agattctggc aagggttattg ccctagacat 420
 taatttacct gtgaagcaat cattccatat tctccatgaa caggggattc ctgtagctcc 480
 tctctgggac tcantcaaag gtcaatttgg tgggcccctt agcccaatgg atttcata 538

<210> 16
 <211> 59
 <212> PRT
 <213> Zea mays

<220>
 <221> UNSURE
 <222> (50)
 <223> Xaa = ANY AMINO ACID

<400> 16
 Val Ser Glu Tyr Leu Asn Leu His Thr Cys Tyr Asp Leu Leu Pro Asp
 1 5 10 15

Ser Gly Lys Val Ile Ala Leu Asp Ile Asn Leu Pro Val Lys Gln Ser
 20 25 30

Phe His Ile Leu His Glu Gln Gly Ile Pro Val Ala Pro Leu Trp Asp
 35 40 45

Ser Xaa Lys Gly Gln Phe Gly Gly Pro Leu Ser
 50 55

<210> 17
 <211> 542
 <212> DNA
 <213> Oryza sativa

<220>
 <221> unsure
 <222> (248)
 <223> n = A, C, G or T

<220>
 <221> unsure
 <222> (534)
 <223> n = A, C, G or T

<220>
 <221> unsure
 <222> (539)
 <223> n = A, C, G or T

<400> 17
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 gaaatttatt tgctcaaagc tgcaagaaca gcctgaaggg tactcatttc tgcaaaacca 120
 gattgtcagt atgcctattg gtacatgggc accacatact ggcaaggcaa gcaatagaca 180
 gcttagaact tcgcgaccaa gcactcctct aaattcatgc ctggatttgc tgcttgaaga 240
 tagagtangc tcaattccta tagttgacga taatggcgct ctcccttgatg tctactcgct 300
 cagtgatatc atggctctag gcaagaatga tgtcacactc gtattgagct tgaacagtga 360
 cggtagacat ccttggagct gcaatacagt gaatggccga agacactgtc atactgctta 420
 cacatactcc ggaggtttgg acattgtcac tcagggtgcg ggatctcttt taacaagaca 480
 attgtgagga tatccatgag gaccataatt ccattgaaaa ttgggtccaca tcanaatana 540
 gg 542

<210> 18
 <211> 58
 <212> PRT
 <213> Oryza sativa

<220>
 <221> UNSURE
 <222> (23)
 <223> Xaa = ANY AMINO ACID

<400> 18
 Leu Arg Thr Ser Arg Pro Ser Thr Pro Leu Asn Ser Cys Leu Asp Leu
 1 5 10 15

Leu Leu Glu Asp Arg Val Xaa Ser Ile Pro Ile Val Asp Asp Asn Gly
 20 25 30

Ala Leu Leu Asp Val Tyr Ser Leu Ser Asp Ile Met Ala Leu Gly Lys
 35 40 45

Asn Asp Val Thr Leu Val Leu Ser Leu Asn
 50 55

<210> .19
 <211> 498
 <212> DNA
 <213> Glycine max

<400> 19
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 gaaggggtctg aaatcaattc gagatttcct caagcgccgt accagctacg atgttctacc 120
 tctttcgttt cgactcatca ttcttaatac cgatttactg gtcaagaaga gcttgaccat 180
 ccttctacaa aatggtatcg tttcagcccc gctatgggat tcccatacct caacctttgc 240
 tggacttctt acgacttcgg actatataaa tgttatccaa tattactggc agaatccaga 300
 agccctcaat caaatagatc aattcaaatt gagtagctta agagatatcg aaaaggcaat 360
 tggcgtaacta cctttggaga cggatcgggt acatcctgcg cgacctcttt acgatgcttg 420
 tcgcgaagat gttgcaaacc cgggcccgcc gtatcccgtg gggttgatgt tgatgacgaa 480
 gacgggaaaa gagatggt 498

<210> 20
 <211> 122
 <212> PRT
 <213> Glycine max

<400> 20
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 1 5 10 15
 Ser Tyr Asp Val Leu Pro Leu Ser Phe Arg Leu Ile Ile Leu Asn Thr
 20 25 30
 Asp Leu Leu Val Lys Lys Ser Leu Thr Ile Leu Leu Gln Asn Gly Ile
 35 40 45
 Val Ser Ala Pro Leu Trp Asp Ser His Thr Ser Thr Phe Ala Gly Leu
 50 55 60
 Leu Thr Thr Ser Asp Tyr Ile Asn Val Ile Gln Tyr Tyr Trp Gln Asn
 65 70 75 80
 Pro Glu Ala Leu Asn Gln Ile Asp Gln Phe Lys Leu Ser Ser Leu Arg
 85 90 95
 Asp Ile Glu Lys Ala Ile Gly Val Leu Pro Leu Glu Thr Val Ser Val
 100 105 110
 His Pro Ala Arg Pro Leu Tyr Asp Ala Cys
 115 120

<210> 21
 <211> 514
 <212> DNA
 <213> Triticum aestivum

<220>
 <221> unsure
 <222> (356)
 <223> n = A, C, G or T

<220>
 <221> unsure
 <222> (382)

<223> n = A, C, G or T

<220>

<221> unsure

<222> (427)

<223> n = A, C, G or T

<220>

<221> unsure

<222> (431)

<223> n = A, C, G or T

<220>

<221> unsure

<222> (439)

<223> n = A, C, G or T

<400> 21

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ggatcggttc cgcagctggt gcatcttgca tccctttcag gaattttgaa atgtatctgt 180
agatacttca agaactccac tggtagtttg ccgattctaa accaaccagt atgctcaatt 240
ccgctggggg acctgggggt ccaaaaaatg ggtgaaccaa atggcatcca ttgggtatgt 300
tgccggccta atacatctct taactctgcc cttaacttgt tgggtcaagc tggganttat 360
tcaataccca ttggtgggat gnataacgac cccttatttg acacataccc aagaagtgc 420
atcacantct ngcgaaagna aggtacacc ataccgccta gattagatga catcaacaag 480
gctgcaactc gggcaagacc gaatcacttt gggg 514
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<210> 22

<211> 77

<212> PRT

<213> Triticum aestivum

<400> 22

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Leu Val His Ala Thr Pro Tyr Glu Ser Leu Arg Gly Ile Ala Met Lys
  1                      5                      10                      15
```

```
Ile Leu Glu Thr Gly Ile Ser Thr Val Pro Ile Ile Tyr Ser Ser Ser
      20                      25                      30
```

```
Ser Asp Gly Ser Phe Pro Gln Leu Leu His Leu Ala Ser Leu Ser Gly
      35                      40                      45
```

```
Ile Leu Lys Cys Ile Cys Arg Tyr Phe Lys Asn Ser Thr Gly Ser Leu
      50                      55                      60
```

```
Pro Ile Leu Asn Gln Pro Val Cys Ser Ile Pro Leu Gly
      65                      70                      75
```